

<110> Doi, Yoshiharu
Matsusaki, Hiromi

<120> METHOD OF PRODUCING COPOLYMER POLYESTER

<130> 07898-070001

<140> 09/807,123

<141> 2001-04-05

<150> PCT/JP00/05331

<151> 2000-08-09

<150> JP 225102/1999

<151> 1999-08-09

<160> 11

<170> PatentIn Ver. 2.0

<210> 1

<211> 1680

<212> DNA

<213> Pseudomonas sp. strain 61-3

<220>

<221> CDS

<222> (1)..(1677)

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Thr Ser Ala Arg Met Val Leu Thr Gln Ala Ile Lys Gln Pro Ile His	
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agc gtc aag cac gtc gcg cat ttt ggc atc gag ctg aag aac gtg atg	192
Ser Val Lys His Val Ala His Phe Gly Ile Glu Leu Lys Asn Val Met	
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Phe Gly Lys Ser Lys Leu Gln Pro Glu Ser Asp Asp Arg Arg Phe Asn	
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Asp Pro Ala Trp Ser Gln Asn Pro Leu Tyr Lys Arg Tyr Leu Gln Thr	
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Tyr Leu Ala Trp Arg Lys Glu Leu His Asp Trp Ile Gly Asn Ser Lys	
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Asn	Pro	Thr	Lys	Ala	Gln	Arg	Glu	Trp	Gly	Leu	Ser	Thr	Tyr	Ile	Asp		
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Thr Asn Asp His Ile Thr Pro Trp Lys Ser Cys Tyr Lys Ser Ala Gln
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ctg ttc ggt ggc aag gtc gaa ttc gtg ctg tcc agc agt ggg cat atc   1440
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Lys His Thr Asp Ser Trp Trp Leu His Trp Gln Ala Trp Gln Ala Glu
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<213> Pseudomonas sp. strain 61-3

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Leu Phe Val Asp Glu Lys Thr Leu Glu Ala Ala Lys Arg His Ser Tyr				
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Gln Ala Gly Val Leu Glu Gly Arg Asp Met Ala Lys Val Phe Ala Trp				
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Met Arg Pro Asn Asp Leu Ile Trp Asn Tyr Trp Val Asn Asn Tyr Leu				
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Leu Gly Asn Glu Pro Pro Val Phe Asp Ile Leu Phe Trp Asn Asn Asp				
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Thr Thr Arg Leu Pro Ala Ala Phe His Gly Asp Leu Ile Glu Met Phe				
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Leu Phe Gly Gly Lys Val Glu Phe Val Leu Ser Ser Ser Gly His Ile				
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Asn	Asp	Ala	Val	Ser	Pro	Ser	Asn	Thr	Leu	Leu	Asn	Pro	Leu	Ala	Ile	
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Ser	Thr	Leu	Arg	Ser	Val	Ala	Ala	His	Gly	Leu	Arg	His	Pro	Val	Arg		

495

Glu Asn Pro Lys Leu Ser Gly Asp Pro Arg Ala Trp Tyr Tyr Asp Gly
 500 505 510
 Thr His Val Glu Gly Ser Trp Trp Pro Arg Trp Leu Ser Trp Ile Gln
 515 520 525
 Glu Arg Ser Gly Thr Gln Arg Glu Thr Leu Met Ala Leu Gly Asn Gln
 530 535 540
 Asn Tyr Pro Pro Met Glu Ala Ala Pro Gly Thr Tyr Val Arg Val Arg
 545 550 555 560

<210> 5
 <211> 1179
 <212> DNA
 <213> *Ralstonia eutropha*

<220>
 <221> CDS
 <222> (1)..(1179)

<400> 5
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 Met Thr Asp Val Val Ile Val Ser Ala Ala Arg Thr Ala Val Gly Lys
 1 5 10 15
 ttt ggc ggc tcg ctg gcc aag atc ccg gca ccg gaa ctg ggt gcc gtg 96
 Phe Gly Gly Ser Leu Ala Lys Ile Pro Ala Pro Glu Leu Gly Ala Val
 20 25 30
 gtc atc aag gcc gcg ctg gag cgc gcc ggc gtc aag ccg gag cag gtg 144
 Val Ile Lys Ala Ala Leu Glu Arg Ala Gly Val Lys Pro Glu Gln Val
 35 40 45
 agc gaa gtc atc atg ggc cag gtg ctg acc gcc ggt tcg ggc cag aac 192
 Ser Glu Val Ile Met Gly Gln Val Leu Thr Ala Gly Ser Gly Gln Asn
 50 55 60
 ccc gca cgc cag gcc gcg atc aag gcc ggc ctg ccg gcg atg gtg ccg 240
 Pro Ala Arg Gln Ala Ala Ile Lys Ala Gly Leu Pro Ala Met Val Pro
 65 70 75 80
 gcc atg acc atc aac aag gtg tgc ggc tcg ggc ctg aag gcc gtg atg 288
 Ala Met Thr Ile Asn Lys Val Cys Gly Ser Gly Leu Lys Ala Val Met
 85 90 95
 ctg gcc gcc aac gcg atc atg gcg ggc gac gcc gag atc gtg gtg gcc 336
 Leu Ala Ala Asn Ala Ile Met Ala Gly Asp Ala Glu Ile Val Val Ala
 100 105 110
 ggc ggc cag gaa aac atg agc gcc gcc ccg cac gtg ctg ccg ggc tcg 384
 Gly Gly Gln Glu Asn Met Ser Ala Ala Pro His Val Leu Pro Gly Ser
 115 120 125
 cgc gat ggt ttc cgc atg ggc gat gcc aag ctg gtc gac acc atg atc 432
 Arg Asp Gly Phe Arg Met Gly Asp Ala Lys Leu Val Asp Thr Met Ile
 130 135 140
 gtc gac ggc ctg tgg gac gtg tac aac cag tac cac atg ggc atc acc 480
 Val Asp Gly Leu Trp Asp Val Tyr Asn Gln Tyr His Met Gly Ile Thr
 145 150 155 160
 gcc gag aac gtg gcc aag gaa tac ggc atc aca cgc gag gcg cag gat 528
 Ala Glu Asn Val Ala Lys Glu Tyr Gly Ile Thr Arg Glu Ala Gln Asp
 165 170 175
 gag ttc gcc gtc ggc tcg cag aac aag gcc gaa gcc gcg cag aag gcc 576
 Glu Phe Ala Val Gly Ser Gln Asn Lys Ala Glu Ala Ala Gln Lys Ala
 180 185 190
 ggc aag ttt gac gaa gag atc gtc ccg gtg ctg atc ccg cag cgc aag 624
 Gly Lys Phe Asp Glu Glu Ile Val Pro Val Leu Ile Pro Gln Arg Lys


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      195              200              205
ggc gac ccg gtg gcc ttc aag acc gac gag ttc gtg cgc cag ggc gcc 672
Gly Asp Pro Val Ala Phe Lys Thr Asp Glu Phe Val Arg Gln Gly Ala
210              215              220
acg ctg gac agc atg tcc ggc ctc aag ccc gcc ttc gac aag gcc ggc 720
Thr Leu Asp Ser Met Ser Gly Leu Lys Pro Ala Phe Asp Lys Ala Gly
225              230              235              240
acg gtg acc gcg gcc aac gcc tcg ggc ctg aac gac ggc gcc gcc gcg 768
Thr Val Thr Ala Ala Asn Ala Ser Gly Leu Asn Asp Gly Ala Ala Ala
245              250              255
gtg gtg gtg atg tcg gcg gcc aag gcc aag gaa ctg ggc ctg acc ccg 816
Val Val Val Met Ser Ala Ala Lys Ala Lys Glu Leu Gly Leu Thr Pro
260              265              270
ctg gcc acg atc aag agc tat gcc aac gcc ggt gtc gat ccc aag gtg 864
Leu Ala Thr Ile Lys Ser Tyr Ala Asn Ala Gly Val Asp Pro Lys Val
275              280              285
atg ggc atg ggc ccg gtg ccg gcc tcc aag cgc gcc ctg tcg cgc gcc 912
Met Gly Met Gly Pro Val Pro Ala Ser Lys Arg Ala Leu Ser Arg Ala
290              295              300
gag tgg acc ccg caa gac ctg gac ctg atg gag atc aac gag gcc ttt 960
Glu Trp Thr Pro Gln Asp Leu Asp Leu Met Glu Ile Asn Glu Ala Phe
305              310              315              320
gcc gcg cag gcg ctg gcg gtg cac cag cag atg ggc tgg gac acc tcc 1008
Ala Ala Gln Ala Leu Ala Val His Gln Gln Met Gly Trp Asp Thr Ser
325              330              335
aag gtc aat gtg aac ggc ggc gcc atc gcc atc ggc cac ccg atc ggc 1056
Lys Val Asn Val Asn Gly Gly Ala Ile Ala Ile Gly His Pro Ile Gly
340              345              350
gcg tcg ggc tgc cgt atc ctg gtg acg ctg ctg cac gag atg aag cgc 1104
Ala Ser Gly Cys Arg Ile Leu Val Thr Leu Leu His Glu Met Lys Arg
355              360              365
cgt gac gcg aag aag ggc ctg gcc tcg ctg tgc atc ggc ggc ggc atg 1152
Arg Asp Ala Lys Lys Gly Leu Ala Ser Leu Cys Ile Gly Gly Gly Met
370              375              380
ggc gtg gcg ctg gca gtc gag cgc aaa 1179
Gly Val Ala Leu Ala Val Glu Arg Lys
385              390

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<210> 6

<211> 393

<212> PRT

<213> *Ralstonia eutropha*

<400> 6

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Phe Gly Gly Ser Leu Ala Lys Ile Pro Ala Pro Glu Leu Gly Ala Val
20          25          30
Val Ile Lys Ala Ala Leu Glu Arg Ala Gly Val Lys Pro Glu Gln Val
35          40          45
Ser Glu Val Ile Met Gly Gln Val Leu Thr Ala Gly Ser Gly Gln Asn
50          55          60
Pro Ala Arg Gln Ala Ala Ile Lys Ala Gly Leu Pro Ala Met Val Pro
65          70          75          80
Ala Met Thr Ile Asn Lys Val Cys Gly Ser Gly Leu Lys Ala Val Met
85          90          95
Leu Ala Ala Asn Ala Ile Met Ala Gly Asp Ala Glu Ile Val Val Ala

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<210> 7
<211> 738
<212> DNA
<213> Ralstonia eutropha
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<400> 7																
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Met	Thr	Gln	Arg	Ile	Ala	Tyr	Val	Thr	Gly	Gly	Met	Gly	Gly	Ile	Gly	
1				5					10					15		
acc	gcc	att	tgc	cag	cgg	ctg	gcc	aag	gat	ggc	ttt	cgt	gtg	gtg	gcc	96
Thr	Ala	Ile	Cys	Gln	Arg	Leu	Ala	Lys	Asp	Gly	Phe	Arg	Val	Val	Ala	
			20					25					30			
ggt	tgc	ggc	ccc	aac	tcg	ccg	cgc	cgc	gaa	aag	tgg	ctg	gag	cag	cag	144
Gly	Cys	Gly	Pro	Asn	Ser	Pro	Arg	Arg	Glu	Lys	Trp	Leu	Glu	Gln	Gln	
		35					40					45				

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aag gcc ctg ggc ttc gat ttc att gcc tcg gaa ggc aat gtg gct gac 192
Lys Ala Leu Gly Phe Asp Phe Ile Ala Ser Glu Gly Asn Val Ala Asp
  50                      55                      60
tgg gac tcg acc aag acc gca ttc gac aag gtc aag tcc gag gtc ggc 240
Trp Asp Ser Thr Lys Thr Ala Phe Asp Lys Val Lys Ser Glu Val Gly
  65                      70                      75                      80
gag gtt gat gtg ctg atc aac aac gcc ggt atc acc cgc gac gtg gtg 288
Glu Val Asp Val Leu Ile Asn Asn Ala Gly Ile Thr Arg Asp Val Val
                      85                      90                      95
ttc cgc aag atg acc cgc gcc gac tgg gat gcg gtg atc gac acc aac 336
Phe Arg Lys Met Thr Arg Ala Asp Trp Asp Ala Val Ile Asp Thr Asn
                      100                      105                      110
ctg acc tcg ctg ttc aac gtc acc aag cag gtg atc gac ggc atg gcc 384
Leu Thr Ser Leu Phe Asn Val Thr Lys Gln Val Ile Asp Gly Met Ala
                      115                      120                      125
gac cgt ggc tgg ggc cgc atc gtc aac atc tcg tcg gtg aac ggg cag 432
Asp Arg Gly Trp Gly Arg Ile Val Asn Ile Ser Ser Val Asn Gly Gln
                      130                      135                      140
aag ggc cag ttc ggc cag acc aac tac tcc acc gcc aag gcc ggc ctg 480
Lys Gly Gln Phe Gly Gln Thr Asn Tyr Ser Thr Ala Lys Ala Gly Leu
                      145                      150                      155                      160
cat ggc ttc acc atg gca ctg gcg cag gaa gtg gcg acc aag ggc gtg 528
His Gly Phe Thr Met Ala Leu Ala Gln Glu Val Ala Thr Lys Gly Val
                      165                      170                      175
acc gtc aac acg gtc tct ccg ggc tat atc gcc acc gac atg gtc aag 576
Thr Val Asn Thr Val Ser Pro Gly Tyr Ile Ala Thr Asp Met Val Lys
                      180                      185                      190
gcg atc cgc cag gac gtg ctc gac aag atc gtc gcg acg atc ccg gtc 624
Ala Ile Arg Gln Asp Val Leu Asp Lys Ile Val Ala Thr Ile Pro Val
                      195                      200                      205
aag cgc ctg ggc ctg ccg gaa gag atc gcc tcg atc tgc gcc tgg ttg 672
Lys Arg Leu Gly Leu Pro Glu Glu Ile Ala Ser Ile Cys Ala Trp Leu
                      210                      215                      220
tcg tcg gag gag tcc ggt ttc tcg acc ggc gcc gac ttc tcg ctc aac 720
Ser Ser Glu Glu Ser Gly Phe Ser Thr Gly Ala Asp Phe Ser Leu Asn
                      225                      230                      235                      240
ggc ggc ctg cat atg ggc
Gly Gly Leu His Met Gly
                      245

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<210> 8

<211> 246

<212> PRT

<213> Ralstonia eutropha

<400> 8

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Met Thr Gln Arg Ile Ala Tyr Val Thr Gly Gly Met Gly Gly Ile Gly
  1                      5                      10                      15
Thr Ala Ile Cys Gln Arg Leu Ala Lys Asp Gly Phe Arg Val Val Ala
                      20                      25                      30
Gly Cys Gly Pro Asn Ser Pro Arg Arg Glu Lys Trp Leu Glu Gln Gln
                      35                      40                      45
Lys Ala Leu Gly Phe Asp Phe Ile Ala Ser Glu Gly Asn Val Ala Asp
                      50                      55                      60
Trp Asp Ser Thr Lys Thr Ala Phe Asp Lys Val Lys Ser Glu Val Gly
                      65                      70                      75                      80
Glu Val Asp Val Leu Ile Asn Asn Ala Gly Ile Thr Arg Asp Val Val

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<210> 9
<211> 542
<212> DNA
<213> Pseudomonas sp. strain 61-3
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caatttgga	agatcggcgt	aggcctgaac	aaggtagaac	cggccgggtca	gtacgcactg	120
aaattgacct	tcgacgacgg	ccatgacagc	ggcctgttca	cctgggatta	tctgtaccaa	180
ctggcacaa	gtcaggaagc	actttgggca	gattatcttg	cagaactcaa	agcggctgga	240
aagtcccgcg	acccaagcga	atccatcgtc	aagctgatgc	tctaattcag	gcctcttgct	300
ctttagaggg	cattttctaa	tttcatctgt	ttgaatgtc	cgtgtgctgg	caagcgattg	360
gcctgcttgc	gaaaaaaatt	aaactcgggt	aaccaatgga	gctggcaagt	tccttgcagt	420
gctctctgaa	ctagaaagca	acgttgtgca	attaacggtc	acccgagcag	tagtacctgg	480
cggttgctgt	gtgactacac	agctggtccc	ggtactcgtc	tcaggacaat	ggagcgtcgt	540
ag						542

<213> Ralstonia eutropha

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ctgtaccgag	gtctacggcg	gcgacgcctg	caccgtggcc	gacgccggtc	gcttctactc	120
ctatcggcgc	gatggcgtga	ccggcgcgat	ggccagcctg	gtctggctgg	cggactgagc	180
ccgccgctgc	ctcactcgtc	cttgcccttg	gccgcctgcg	cgcgctcggc	ttcagccttg	240
cgtcggcgcg	ggccggggcg	gcccatgatg	tagagcacca	cgccaccggc	gccatgccat	300
acatcaggaa	ggtggcaacg	cctgccacca	cgttgtgctc	ggtgatcgcc	atcatcagcg	360
ccacgtagag	ccagccaatg	gccacgatgt	acatcaaaaa	ttcatccttc	tcgcctatgc	420
tctggggcct	cggcagatgc	gagcgctgca	taccgtccgg	taggtcggga	agcgtgcagt	480
gccgaggcgg	attcccgcgt	tgacagcgcg	tgcggtgcaa	ggcaacaatg	gactcaaatg	540
tctcggaatc	gctgacgatt	cccaggtttc	tccggcaagc	atagcgcgatg	cggtctccat	600
gcgagaatgt	cgcgcttgcc	ggataaaagg	ggagccgcta	tcggaatgga	cgcaagccac	660
ggccgcagca	ggtgcggtcg	agggcttcca	gccagttcca	gggcagatgt	gccggcagac	720

cctcccgctt tgggggaggc gcaagccggg tccattcgga tagcatctcc ccatgcaaag 780
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<210> 11

<211> 292

<212> DNA

<213> *Ralstonia eutropha*

<400> 11

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 ggcccgcgaa tcgtttctgc ccgcgcggca ttcctcgtt tttgcgcaa ttcaccgggt 180
 tttccttaag ccccgtcgct tttcttagtg ccttgttggg catagaatca gggcagcggc 240
 gcagccagca ccatgttcgt gcagcgcggc cctcgcgggg gcgaggctgc ag 292